



SFPE Subcommittee on Research & Innovation

Roadmap Working Group – Meeting Report

July 18, 2016

Present: Amanda Kimball (Group Leader), Al Condello, Jason Floyd, Gavin Horn, Chris LaFleur, Cristian Maluk, Tom Woodford, Axi Zhou, Greg Baker (Chair RTM), and Chris Jelenewicz (Staff).

The following was discussed:

- 1. Summary from Workshop in Poland** – Greg Baker gave an update on the Research Workshop that was held on May 26 in Warsaw. Unfortunately, only 10 people participated in this workshop. The report from this workshop is attached to the bottom of this meeting report.

At this Workshop, the participants a) reviewed the existing list of research priorities, b) suggested new topics to be considered by the Working Group and c) offered suggestions on the prioritization of these topics. During this workshop, the workshop participants stressed that the roadmap should distinguish itself from other research agenda documents by only focusing on topics that promote the practice of fire safety engineering.

- 2. North American Workshop** – There are plans for another Workshop in September at the SFPE North America Conference in Denver. It was noted that the purpose of these workshops is to ensure transparency with SFPE members and give SFPE members the opportunity to contribute. As such, the Subcommittee should drive the development of the roadmap not the workshops.

It was suggested that the workshop should be held during the actual meeting not at the end of the meeting. It was also suggested that the workshop take less time if it could get a better time slot. CJ will investigate with the conference program committee.

In addition to holding the workshop, the Working Group agreed that some sort of survey will be given to conference participants. This survey will be developed before the conference.

3. **Next Steps** – The working group will develop a survey for SFPE members that will ask participants to prioritize the list of topics. It will also ask survey participants to recommend any topics that are believed to be missing from the list. Amanda will draft this survey and get feedback from the Working Group. Once the survey is completed, CJ will distribute the survey to SFPE members via Survey Monkey.
4. **Next Meeting** -- CJ will schedule a meeting via a Doodle Poll. This meeting will be held sometime in August.

End of Report

SFPE Subcommittee on Research & Innovation

Report from Fire Safety Engineering Research Agenda Workshop

Warsaw, Poland -- 26 May 2016

Present: Greg Baker (SCRI, Chair), Mike Crowley, Luca Fiorentini, Mike Madden, Milosh Puchovsky, Piotr Tofilo, Christopher Wieczorek, Brian Meacham (RTM Chair), Nicole Boston (Staff) and Chris Jelenewicz (Staff).

The following items were discussed:

Welcome: Greg Baker welcomed the workshop participants. He indicated the purpose of the workshop is to provide data to the SFPE Subcommittee on Research & Innovation (SCRI) that is tasked with developing a research agenda for the fire protection engineering profession.

SFPEs Vision: Brian Meacham made a presentation on SFPEs vision in the area of Research, Tools and Methods. He indicated SFPE recently reorganized its committee structure. The purpose of this re-organization was to organize activities into a more effective structure. A key objective of this reorganization was arranged around professional recognition.

The Research, Tools & Methods Committee (RTM) is working on defining the information and knowledge the profession needs and where should it reside. Specifically, the RTM is managing SFPEs Intellectual property

In the early 2000s SFPE, the United Foundation, and FORUM of Fire Research Laboratory Directors all developed research agendas. Currently, several research agendas have been published.

Specifically, he indicated the research agenda should ask the following questions:

Where do we need to advance to help our profession advance?

What are the topics we should be directing the research community?

What do we need to support education and competency?

Subcommittee's Vision: Greg Baker presented his vision for the SCRI. He indicated that the research agenda will be a living document and have a long-term focus. Moreover, the research agenda will be the definitive document that will be central to defining the future of SFPEs technical initiatives. He indicated the main focus of the research agenda will always be on what is needed by practicing fire safety engineers and will serve as a road-map that will a) coordinate future SFPE research initiatives, b) serves as a means to form partnership with research providers, c) act as a bridge

between research & practice and d) serve as a guide for subthemes for future SFPE conferences.

Proposed List of Research Topics: Greg noted that the SCRI Roadmap Working group brainstormed a list of possible research topics to include in the research agenda. The purpose of this list was to provide a means to start a discussion.

1. Structures in fire
 - a. Tall timber buildings
2. Human behaviour
3. Environmental protection and sustainability
 - a. Tall timber buildings
 - b. Hazards of new building materials
 - c. Batteries and energy storage
 - d. PV arrays
 - e. Impact of fire on the environment
 - f. Eco-impact of FP
 - g. Toxicity of fire retardants
4. Big data and FP
 - a. Smart fire fighting
 - b. Smart buildings
 - c. Smart enforcement
5. Economic impact of fire – does not have a direct impact on FSE design
 - a. Value of Fire Depts to community – does not have a direct impact on FSE design
 - b. Cost/benefit of proposed code/standards changes
6. Demographics
 - a. Aging population
 - b. Mobility
 - c. Accessibility
 - d. Aging in place and home healthcare
7. Health and wellbeing of FS personnel
 - a. Risk of cancer
8. Resiliency
 - a. Reliability of FP Systems
9. Wildland fires
10. Tunnels and underground FP
11. Risk management
12. Models
 - a. Things that models can't do today
13. Data
 - a. Gaps in the Data
 - b. Data accessibility
14. FP Systems
 - a. Smoke Detection Nuisance
 - b. New system technologies (i.e. O2 reduction)
 - c. Reliability of systems/aging of systems

The workshop participants were asked if any important topics were missing from the original list. The following topics were suggested:

- Fire initiation & Development (fire dynamics)
- V&V methods/models
- Acceptance criteria
- Correlations that are used by engineers
- Guidance on simple vs complex tools for fire safety engineers
- Toxicity
- Fire service operations
- Risk informed PBD
- Industrial fire protection
- BIM
- Fire test methods linked to a usable data
- Applying technology to the practice of FSE
- Tools for emerging countries

Prioritization Exercise: Following the generating of topics, Greg Baker led the workshop participants through a prioritization exercise. Each participant was asked to prioritize 3 to 5 topics from both of the above lists. The following is the results of this exercise:

Prioritization Exercise Results

Risk Informed PBD – 5

Human Behavior – 5

Data – 4

Environment – 3

Fire Dynamics – 3

Resiliency – 3

Validation – 3

Demographics – 2

Fire Protection Systems – 2

Guidance on the use of tools – 2

New Test Methods – 2

Tools for other countries – 2

Big Data – 1

Industrial FP – 1

Models - 1

Additionally, the workshop participants were asked if any of the topics should not be included on the list. The participants recommended that the item related to the risk of cancer and the economic impact of fire be deleted from the list.

Final Thoughts: Greg Baked indicated that the information from this workshop will be reviewed by the SCRI. He also indicated he will ask the subcommittee to ensure that anything that is part of the research agenda should link to the profession of fire safety engineering.

End of Report